

## Claims

1. A shrinking device (2, 70) for shrinking a tool  
5 (12) into a tool holder (11, 68) of a tool chuck (10),  
having a heating device (14, 52, 72) for heating the  
tool holder (11, 68), characterized by a gas suction  
device (16) for evacuating gases (32, 84) escaping from  
the tool holder (11, 68).
- 10 2. The shrinking device (2, 70) as claimed in  
claim 1, characterized by a gas-conducting unit (18,  
62, 98) for conducting gas (32, 84) from a holder  
opening (34) of the tool holder (11, 68) to a gas inlet  
15 opening (38, 90) of the gas suction device (16).
3. The shrinking device (2, 70) as claimed in claim 1  
or 2, characterized by a gas-conducting unit (18, 62,  
98) which encompasses a negative pressure region (36,  
20 88), the gas-conducting unit (18, 62, 98) being  
provided for maintaining a negative pressure in the  
negative pressure region (36, 88) relative to an  
external region of the gas-conducting unit (18, 62, 98)  
and a pressure drop from a holder opening (34, 82) of  
25 the tool holder (11, 68) to the negative pressure  
region (36, 88).
4. The shrinking device (2) as claimed in claim 2 or  
3, characterized in that the heating device (14, 52)  
30 annularly encompasses the tool holder (11) and the gas-  
conducting unit (18, 62) is designed as a hood on the  
heating device (14, 52).
5. The shrinking device (2, 70) as claimed in one of  
35 claims 2 to 4, characterized in that the heating device  
(14, 52, 72) forms part of the gas-conducting unit (18,  
62, 98).

6. The shrinking device (2) as claimed in one of claims 2 to 5, characterized in that the heating device (14, 52) has gas ducts (48, 54, 56, 58) which are provided for gas (32) to flow through during the operation of the gas suction device (16).

7. The shrinking device (2) as claimed in claims 3 and 6, characterized in that the gas ducts (48) are connected to the negative pressure region (36) by a gas line (50).

8. The shrinking device (2) as claimed in claims 3 and 6, characterized in that the gas ducts (54, 56, 58) open into the negative pressure region (36).

9. The shrinking device (2, 70) shrinking device (2) as claimed in one of claims 2 to 8, characterized in that the tool chuck (10) has an upper end surface (80) arranged at one end of the tool holder (68) and the gas-conducting unit (18, 62, 98) completely surrounds the tool holder (68) above the end surface (80).

10. The shrinking device (70) as claimed in one of the preceding claims, characterized by a shielding element (78, 102) for resting on an upper end surface (80) arranged at one end of the tool holder (68), the shielding element (78, 102) having a gas-conducting duct (86, 104) for conducting gas (64) out of the holder opening (82).

11. The shrinking device (70) as claimed in claim 10, characterized in that the shielding element (78, 102) is provided for shielding a tool (12), which is inserted into the tool holder (68), from a magnetic field generated by the heating device (72).

12. The shrinking device (70) as claimed in claim 10 or 11, characterized in that the shielding element (78, 102) is provided as a stop element for positioning the heating device (72).

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13. The shrinking device (70) as claimed in one of claims 10 to 12, characterized in that the shielding element (78) upwardly closes off the holder opening (82) in such a manner that gases (84) rising out of the holder opening (82) can only leave the holder opening (82) upward through at least one gas-conducting duct (86) in the shielding element (78).

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14. A method for shrinking a tool (12) into a tool holder (11, 68) of a tool chuck (10), in which the tool holder (11, 68) is heated by a heating device (14, 52, 72), characterized in that gases (32, 84) are evacuated from the tool holder (11, 68) with the aid of a gas suction device (16).

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